

NASA EEE PARTS ASSURANCE STANDARD (8739.10)

Overview and Future Plans

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Outline

- **Background**
- **Details**
- **More Details**
- **Documentation**
- **Referencing Documents**
 - Initial Plan
 - Current Plan



EEE Parts Assurance Standard: NASA-STD-8739.10

➤ Background

- Within NASA:
 - Lists requirements from Center documents that must be addressed by Programs and Projects in their EEE Parts Management and Control Plan (EPMCP)
 - Tailor-able by Center/Project Technical Authority
 - Standardize requirements for “Low Risk” projects - not to overburden “Higher Risk” projects with excessive requirements



Class A



Class D

- Outside NASA: Single Agency document that can be referenced in NASA contracts (e.g. CCP) and used in NASA-ESA-JAXA Mutual Recognition of SMA Standards

➤ Maintain Center-to-Project Relationship

- Center still has ample control
- Project still assumes the risk



Details

- **Applicability**

- Flight hardware - Launch vehicles - Critical ground support equipment (GSE) - Critical ground test systems
- Category 1 and Category 2 projects as defined by NPR 7120.5, NASA Space Flight Program and Project Management Requirements
- Class A, B, C or D payloads as defined by NPR 8705.4, Risk Classification for NASA Payloads, Appendix A.

- **Non – Applicability**

- Institutional projects as defined by NPR 7120.7, NASA Information Technology and Institutional Infrastructure Program and Project Requirements
- Research and Technology Development Programs and Projects as defined by NPR 7120.8, NASA Research and Technology Program and Project Management Requirements

- **Tailoring**

- Individual NASA Centers may establish program/project-specific requirements and/or guidelines, as appropriate. To do this, individual provisions of this standard may be tailored by contract or program specifications to meet specific constraints and program/project needs.
- Formally documented as part of program or project requirements and approved by the Technical Authority in accordance with procedures in NPR 8715.3, NASA General Safety Program Requirements & and NASA-STD-8709.20, Management of Safety and Mission Assurance Technical Authority



More Details...

- Every EEE part intended for use in space flight and critical ground support equipment shall be reviewed and approved for compatibility with the intended environment and mission life, as applicable.
- Parts shall be selected so that flight hardware meets all performance and reliability requirements in the worst-case predicted mission environment

EEE Part Grade Description

GRADE	SUMMARY	RELIABILITY	RISK	MTBF	COST	TYPICAL USE
1	Space quality class qualified parts, or equivalent.	Highest	Very Low	Longest	Very High	Spaceflight
2	Full Military quality class qualified parts, or equivalent.	Very High	Low	Very Long	High	Space flight or critical ground support equipment
3	Low Military quality class parts, and Vendor Hi-Rel or equivalent. Screened automotive grade (AEC) EEE parts	Medium	Medium	Variable	Moderate	Space flight experiments, aeronautical flight experiments, critical ground support equipment, test demonstrations and ground support systems
4	"Commercial" quality class parts. Qualification data at manufacturer's discretion. No government process monitors incorporated during manufacturing.	Variable	High	Variable	Lowest	Aeronautical flight experiments noncritical ground support equipment, ground support systems, test demonstrations and prototypes. Limited critical GSE.



Documentation

- **Program / Project EEE Parts Management and Control Plan (EPMCP)**
 - Plan can be stand-alone documents or part of Project Product Assurance Plan
 - Specific Issue Plans may be contained in EPMCP or stand alone doc's
- **Parts Lists**
 - (EPARTS recommended)
 - As Designed Parts List
 - Approval Record
 - As Built Parts List
- **Analyses**
 - Derating Analysis
 - Parts Obsolescence



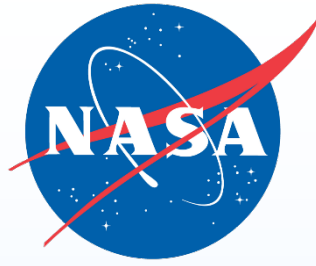
Referencing Documents

- **Initial Plan:**
 - **NASA Parts Policy (NPD 8730.2)**
- **Current Plan:**
 - **NASA Quality Assurance Program Policy (NPD 8730.5)**
 - **Risk Classification for NASA Payloads (NPR-8705.4)**



NASA Quality Assurance Program Policy (NPD 8730.5)

- **ATTACHMENT A: Quality System Requirements for Organizations Responsible for Performance of Work**
 - A.2 Work that is both critical and complex is performed in accordance with the following workmanship standards: NASA-STD-8739.1, NASA-STD-8739.4...
 - Propose addition:
 - A.# All work that is both critical and complex hardware containing electric, electronic and electromechanical components shall meet all requirements in accordance with the NASA EEE Parts Assurance Standard, NASA-STD-8739.10.



Questions?